

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 (currently amended). A method for equalizing and decoding data signals, which comprises the steps of:

receiving a radio signal containing an error-protection-coded data signal transmitted over a radio channel, the data signal being error-protection coded at a transmitter end;

sampling the radio signal received to generate a digital input data signal;

feeding the digital input data signal to an adaptive equalizer having a first channel estimator which repeatedly determines first channel parameters of the radio channel, the adaptive equalizer uses the first channel parameters to calculate and output an equalized data signal;

feeding the equalized data signal to a second channel estimator which repeatedly calculates, according to a method

of moments, second channel parameters including a variance of radio channel noise and a damping factor of the radio channel, with both the variance of radio channel noise and the damping factor of the radio channel being calculated in dependence on statistical moments of the equalized data signal using a method of moments;

feeding the second channel parameters to a decoder to be used as computing parameters in the decoding for calculating a decoded output signal; and

decoding the equalized data signal in the decoder to determine the decoded output signal which is a reconstruction of an initial input signal on which the error-protection-coded data signal is based.

2 (original). The method according to claim 1, which comprises basing a coding and the decoding on a turbo code.

3-5 (canceled).

6 (original). The method according to claim 1, which comprises carrying out one of linear zero-forcing block equalization and linear minimum-mean-square-error block equalization on the digital input signal.

7 (currently amended). A device for equalizing and decoding an error-protection-coded data signal transmitted over a radio channel, the device comprising:

an adaptive equalizer having a first channel estimator, said adaptive equalizer receiving a digital input data signal generated by sampling a received radio signal carrying the error-protection coded data signal, said first channel estimator repeatedly determining first channel parameters of the radio channel, said adaptive equalizer calculating and outputting an equalized data signal with an aid of the first channel parameters;

a second channel estimator connected to said adaptive equalizer and receiving the equalized data signal, said second channel estimator repeatedly determining, according to an algorithm based on a method of moments, second channel parameters including a variance of radio channel noise and a damping factor of the radio channel, with both the variance of radio channel noise and the damping factor of the radio channel being determined in dependence on statistical moments of the equalized data signal ~~using an algorithm based on a method of moments~~; and

a decoder connected to said second channel estimator and receiving the second channel parameters to calculate a decoded output signal, said decoder also receiving the equalized data signal for determining the decoded output signal which is a reconstruction of an initial input signal on which the error-protection-coded data signal is based.

8 (original). The device according to claim 7, wherein said decoder is a turbo decoder.

9-11 (canceled).

12 (original). The device according to claim 7, wherein said adaptive equalizer is selected from the group consisting of linear zero-forcing block equalizers and linear minimum-mean-square-error block equalizers.